

Notice of Allowability

Application No.

10/034,884

Examiner

Patricia L. Hailey

Applicant(s)

HERTEL ET AL.

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1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an Information Disclosure Statement filed on December 27, 2001.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☒ The drawings filed on 27 December 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

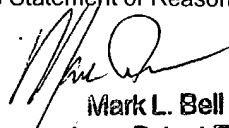
7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. <u>3</u> . |
| 3 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. <u>2</u> | 7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |


Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700

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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Malcolm Chisholm on January 14, 2004.

The application has been amended as follows:

- a. In line 3 of claim 5, please delete the word "grater" and insert therefor the word -greater--.*
- b. In line 1 of claim 12, please delete "9" and insert therefor -11--.*

Claim 3 has been amended to correct a spelling error, and claim 12 has been amended to correct its dependency (claim 9, from which claim 12 originally depended, is directed to a porous carbon body).

Allowable Subject Matter

2. Claims 1-12 are allowed.

Reasons for Allowance

3. The following is an examiner's statement of reasons for allowance:

The prior art of record does not teach or reasonably suggest the claimed porous carbon body comprising an electronically conductive graphite powder, a thermoset binder, and a modified carbon black, said modified carbon black being carbon having attached thereto at least one organic group (comprising at least one aromatic group or a C₁-C₁₂ alkyl group and at least one ionic group, one ionizable group). The prior art also does not teach or suggest the claimed method for producing the claimed porous carbon body.

Gaudet et al. (U. S. Patent Application Publication No. 2003/0042205) disclose granulated products for chromatography comprising carbonaceous particles and a carbonized agent or binder (e.g., a

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synthetic resin, a pitch component, or a mixture thereof). The carbonaceous particles are exemplified by graphite powder, carbon fibers, etc., but is preferably carbon black. Further, the carbonaceous particles may have organic groups attached thereto. However, Gaudet et al. do not teach or reasonably suggest that the carbonaceous particles can be a mixture of, for example, graphite powder and carbon black (or of, additionally, carbon fibers), namely, the *combination* of graphite powder and a modified carbon black (and carbon fiber, see Applicants' claim 6) as set forth in the instant claims.

Nagasawa et al. (U. S. Patent No. 4,094,897) teach a resin-bonded graphite body comprising 3-12 wt. % of a thermosetting resin (phenolic resin, epoxy resin; col. 3, lines 39-52), and 88 to 97 wt. % of a carbonaceous powder, at least 50% of which (the carbonaceous powder) is natural crystalline graphite powder. The carbonaceous powder may include up to 20 wt. % of cokes and soot (e.g., carbon black; see col. 1, lines 9-11). See col. 3, lines 3-32 of Nagasawa et al. While this reference is strongly similar to Applicants' invention, Nagasawa et al. do not teach or reasonably suggest the modified carbon black recited in the instant claims.

Herscovici (U. S. Patent No. 4,920,017) teach porous and non-porous composites useful as electrodes in electrochemical cells, said composites comprising a pressure-molded composite of carbon particles and thermoplastic resin particles. The carbon particles can be carbon black, graphite, or a mixture thereof (col. 3, lines 17-20), and the thermoplastic resin particles may be a thermoplastic fluoropolymer, such as polyvinylidene difluoride (col. 3, lines 62-64). The weight ratio of carbon particles to resin particles is preferably 1:1, but may also be 1:5 (col. 4, lines 14-16). Even though the carbonaceous particles could comprise carbon black and graphite, the maximum weight percentage of carbon black and graphite would be 25 wt. % each, based on the total amount of composite (a 1:1 weight ratio of carbon particles and resin particles results in 50 wt. % carbon particles and 50 wt. % resin particles, the carbon particles comprising at most half graphite and half carbon black), which is outside the claimed percentage range of graphite (67% to 87%).

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Bolster et al. (U. S. Patent No. 4,835,074) teach elemental carbon with or without added oxygen functionality that is chemically modified with covalently bonded nitrogen-containing groups to provide elemental carbons for electrochemical cells. The modified carbons of Bolster et al. are not the same as the modified carbon black recited in the instant claims. Additionally, Bolster et al. disclose electrochemical cells comprising Patentees' modified carbons, but do not teach or suggest the presence of graphite or a thermoset binder to produce Applicants' claimed porous carbon body.

Nguyen et al. (U. S. Patent No. 6,645,287) and Johnson et al. (U. S. Patent No. 6,336,965) both teach modified carbon blacks comparable to that recited in the instant claims. However, these references disclose and claim the employment of the modified carbon blacks in coating compositions for surfaces such as coils, metals, appliances, furniture, etc. (Nguyen et al.), and pigment products used in applications such as inks, coatings, toners, plastics, rubber, films, etc. (Johnson et al.).

Shaw et al. (U. S. Patent No. 4,957,593) teach modified composite electrodes comprising a conductive filler (carbon black, graphite, carbon fibers, or metallic wire) in a matrix or binder (styrenes or acrylics). The electrodes may also comprise modifiers such as cobalt phthalocyanine, polyvinylferrocene, silver or silver oxide, zeolites, clays, layered double hydroxides, etc.). See col. 2, line 33 to col. 3, line 48. Shaw et al. do not teach or reasonably suggest the modified carbon black recited in the instant claims, nor does this reference teach or suggest the presence of *both* graphite and carbon black (or of, additionally, carbon fibers) in the conductive filler.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

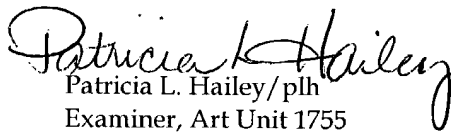
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on (571) 272-1362. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1200.



Patricia L. Hailey/plh
Examiner, Art Unit 1755
January 15, 2004



Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700